

REMARKS / ARGUMENTS

The action by the Examiner in this application, together with the cited references, has been given careful consideration. Following such consideration, claims 3, 16, 21 and 31 have been amended. These claims have been rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Based upon the Examiner's comments in paragraphs 7 and 8 of the Office Action, it is believed that claims 3-9, 16, 21 and 31 are now in condition for allowance.

With respect to the remaining claims, these claims stand rejected as being anticipated and obvious primarily in view of the '052 patent to May et al. The '052 patent to May et al. discloses a piezoelectric gas sensing device. While the patent makes many broad sweeping statements, the actual teaching of the patent relates to a gas sensing device comprised of a piezoelectric element having a layer of "gas-retentive support material" thereon and a "gas-interactive material" associated with the gas-retentive support material. The '052 patent indicates that a "solid interaction product" is the result of the interaction between the "gas-interactive material" and the gas to be tested. (*See column 4, lines 28-32 of the '052 patent*). The '052 patent provides several examples of crystal coated sensors. All are fairly specific as to their composition of material used to form the coating. Moreover, the claims recite a sensing device wherein the gas-retentive support material is formed from at least one component "selected from the group consisting of: tetraethylorthosilicate and methoxypolyethylene glycols, wherein the gas-retentive support material further comprises a material selected from the group consisting of silicone oils, polyethylene glycols, sodium hydrogen carbonate, zinc acetate, tetrahydroxyethylenediamine and

triethanolamine.” The gas-interactive material is comprised of silver and acetate species. In this respect, although the May et al. ‘052 patent makes a number of broad, sweeping statements, the actual teachings and enabling disclosure are fairly specific.

The Examiner takes the position that May et al. teaches a gas sensor for gases containing an element from Group III-Group VII. The Examiner further notes that the sensor is coated with a metal, which may be in an oxide form for those gases from Group VI. The Examiner cites to a Table on the top of column 8 as showing suitable metals for Group VI as being Ag and Mn.

Applicant respectfully submits that the May et al. ‘052 patent, while making broad, sweeping statements as to possible materials for the “gas-interactive material,” is actually limited in its actual teachings and enabling disclosure with respect to such materials. Moreover, Applicant respectfully submits that the Table shown in column 8 of the ‘052 patent refers to illustrative metals for Group VI materials listed in column 7 of the ‘052 patent. In this respect, the ‘052 patent lists fluid components of interest to be detected by the sensor. While the listing is “illustrative” and not limited to the listed materials, the materials identified in Group VI are the following: “hydrides of sulfur, selenium, and tellurium; alkyl selenium and alkyl tellurium compounds.” It is respectfully submitted that the illustrative metals of silver and magnesium set forth in column 8 refer to the hydrides set forth in column 7, and thus are not an enabling disclosure for all potential gases that may contain elemental materials from Group VI of the periodic table.

The Examiner appears to rely upon the statement in the ‘052 patent that the gas-interactive material may be a metal species when the gas component of interest is a hydride.

(See column 8, lines 22-25 of the '052 patent). However, the illustrative examples given in the specification of the '052 patent are: arsine, phosphine, silane, germane, diborane, etc. (See column 8, line 26 of the '052 patent).

Applicant respectfully submits that the '052 patent to May et al. does not provide enabling disclosure with respect to the sensor set forth in the present claims.

As the Examiner well knows, the present claims relate to a sensor for detecting hydrogen peroxide. The sensor is basically comprised of an element exhibiting piezoelectric properties having a metal-oxide-containing coating thereon. The metal oxide coating has a divalent or tetravalent state. In a preferred embodiment, the coating is lead dioxide (PbO₂). One advantage of the present invention is that the coating exhibits a catalytic reaction with hydrogen peroxide. None of the cited references teaches, suggests or shows a sensor as set forth in the claims.

The Federal Circuit has indicated that a claimed compound in a species of genus disclosed in a prior art reference does not necessarily make the compound *prima facie* obvious. (See *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)). The test of whether a particular compound described in the prior art may be relied upon to show obviousness is whether the prior art provided an enabling disclosure with respect to the disclosed compound. (See *Ashland Oil, Inc. v. Delta Resins and Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1017 (1986)). In order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method. (See *Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 13 USPQ2d 1301 (Fed. Cir. 1989)). The Manual of Patent Examining Procedures (MPEP) even provides a

test for determining whether a claimed species or subgenus is patentable in view of a single reference disclosing a genus. (*See MPEP Section 2144.08*).

Applicant respectfully submits that there is nothing in the '052 patent that even remotely teaches, suggests or shows that hydrogen peroxide can be detected, in a catalytic reaction, by a metal oxide having a divalent or tetravalent state. While the '052 patent to May et al. purports to teach a sensor capable of detecting any gas containing any element from Groups III-VII of the periodic table, and further generalizes that metal oxide may be used when the gas component of interest is a hydride, the '052 patent does not teach, suggest or show that a metal oxide having a divalent or tetravalent state and exhibiting a catalytic reaction may be used to detect hydrogen peroxide. The statements of the '052 patent are so broad and encompassing that an infinite number of sensors and gases to be detected would purportedly fall within its teaching. However, there is no enabling disclosure in the '052 patent to May et al. for the sensors that the Examiner credits the reference as teaching. Applicant respectfully submits that for reference to be applied as prior art, it must be enabling to the claimed subject matter. In the present case, there is no enabling disclosure in the '052 patent with respect to a sensor for testing for hydrogen peroxide, let alone a sensor that provides the unexpected results of being catalytic in its reaction (thereby providing a reusable sensor).


As indicated in the prior Office Action, the '052 patent to May et al. discloses a sensor that produces a "solid interaction product." Such a sensor would necessarily have a limited life. Accordingly, the May et al. reference does not teach, suggest or show the benefits of a sensor that reacts catalytically with hydrogen peroxide.

For the foregoing reasons, Applicant respectfully submits that claims 1-2, 11-14, 17-20 and 22-29 are allowable in view of the cited references. The '052 patent to May et al. simply does not provide enabling disclosure for the sensor set forth in these claims. One skilled in the art looking at the May et al. reference would find no suggestion, let alone teaching, of the claimed invention.

For the foregoing reasons, Applicant respectfully submits that the application is in condition for allowance, and favorable action is therefore respectfully requested.

Respectfully submitted,

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Date: October 27, 2005


Christine Goellner